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Textbooks

During his apprenticeship or technical training, the student regards his textbooks—like Cæsar's wife—as above suspicion. Their effect remains with him to the end of his days, yet their worth is probably a matter of the individual choice of his mentors, one, two, or three decades previous. The old standard works in their time, no doubt, were the best available, but as techniques change, their value to-day is restricted to the disclosure of basic principles. It is as well to realize that textbooks in the English language are used wherever that language is spoken and the student subconsciously becomes familiar with, and prejudiced in favour of, the machinery, techniques and the leading technicians of the country of origin.

If it be true that trade follows the flag, it is likewise axiomatic to assert that business is placed by the ex-student in the country where he was trained and—as a rider—he is unquestionably biased in that direction by the textbooks he studied in his youth. It is thus essential that foundry executives should take proper interest in the provision of textbooks for the youth of the industry. Publishers are worried because costs coupled with the limited sale of technical works make textbook publication difficult, as the selling price when relatively small numbers are required, tends to exceed that which the student can afford to pay. Perhaps, also, there is a failure on their part to recognize that the potential demand is greater than pre-war.

The continental countries are faced with similar problems and the employers' associations often make themselves responsible for the provision of textbooks for the youth of their industry. Whilst they are not cheap, they would appear to be less costly than their British equivalents and they have the advantage of being extremely reliable—as one would expect, coming from technical associations. We are not at all happy about the current influx of American textbooks, welcome as they are in the home market, as we fear their commercial effect on the English-speaking overseas student. Few good foundry textbooks of domestic origin are available and their adoption by, say, six schools soon renders them out of print. The provision of a set of standard textbooks merits the careful study of all organizations devoted to the welfare of the foundry industry.

The smallness of this FOUNDRY TRADE JOURNAL is due to the dispute in the printing trade. The publishers of the JOURNAL are in no way a party to the dispute and can only hope that the difficulties will soon be resolved. Until then, it is feared curtailment of contents and some delay in publication may be unavoidable. The Editor apologizes for the inconvenience and disappointment caused to readers and advertisers alike.

Correspondence

ADVISORY SERVICE FOR BRONZE AND BRASS FOUNDERS

To the Editor of THE FOUNDRY TRADE JOURNAL.

SIR,—You were good enough to give publicity to the Advisory Service offered by this Association under Conditional Aid arrangements when the service was started late in 1953. I believe that most founders know of the service because of the many open meetings which have been held in various centres when talks have been given on developments in foundry craft and processes and other subjects of current interest. I would, however, be obliged if you would draw your readers' attention to the other important activity of the service which may have been overlooked and which consists of advice to founders individually and confidentially on their own peculiar problems in increasing efficiency—a term which I prefer to "productivity."

This work is a continuation of that which started with the visit of the Brassfoundry Productivity Team to the United States in 1950 and is, above all, practical. The opportunity to benefit by the experience of the experts available, who unfortunately are all too few, should be seized while it is still available, for the Conditional Aid scheme ends next September.

Many firms have received valuable help at a nominal charge; help which I believe is not available except through the resources of this Association and the spirit of co-operation which exists between members. Some of the applications received under the scheme have been from ironfounders and from firms requiring technical "know how." Naturally the Association cannot deal with these but enquiries for the purpose of increasing productive efficiency in bronze and brass foundries will receive every consideration.

To take advantage of this offer is good sense, but the wise, progressive foundryman will, in addition, join his trade association and will take all opportunities, such as are provided by the Association of Bronze and Brass Founders, for meeting his fellow founders and exchanging ideas with them and thus keeping abreast of all that is happening in his industry.—Yours, etc.

W. T. HOBKIRK (*president*),
Association of Bronze and Brass Founders.
69, Harborne Road,
Edgbaston, Birmingham, 15.
January 17, 1956.

Engineering Unions to Discuss Merger

Possibilities of amalgamation of 20 trade unions with members in the engineering industry are to be discussed at a meeting of representatives of the unions in London on February 29. The Amalgamated Engineering Union, which has 853,544 members, instigated the meeting, having originally asked 31 unions to discuss amalgamation.

Among the unions which will be represented at the meeting will be the Electrical Trades Union and the Amalgamated Union of Foundry Workers. The other unions concerned inlude those representing plumbers, constructional engineers, brassworkers, coppersmiths, sheet-metal workers, blacksmiths, draughtsmen, and foremen.

MR. H. WILKINS, managing director of Wilkins and Mitchell, Limited, Darlaston, returned from a visit to Hamburg on January 13. He had in his pocket an order for the supply of electric washing machines to the value of over £1 million to Western Germany. Delivery will start in February.

Honorary President of Colvilles

Sir John Craig's retirement from his positions as chairman and joint managing director of Colvilles, Limited, came into effect at the close of the annual general meeting of the company, on January 20, at which the title of honorary president of the company was conferred upon him. He remains a director of the company.

Sir John, in a statement to shareholders, said that when he joined the company in 1888 the world output of all classes of steel was recorded as 9,000,000 tons, whereas the production in 1955, as far as could be ascertained, would be over 250,000,000 tons. Even more remarkable, however, he says, is the fact that there are more schemes of expansion under way than at any previous time and it is apparent that the use of steel is passing more and more into the life of the people of every nation.

Sir John says he is "happy to know that the duty of chairmanship will be assumed by my esteemed colleague Sir Andrew McCance, who has rendered distinguished service to the company for many years. The present position of the company owes much to his wonderful knowledge of steelmaking, and to his unique quality of readily passing on to others some of his great knowledge. He is qualified in every sense, technically and commercially, to lead the company to greater achievements."

French Foundry Congress

It is announced that the 29th French Foundry Congress is to be held at Charleville (Ardennes) from May 28 to 30 inclusive. The following papers are expected to be submitted: "Moulding Processes Utilizing Fluid Sands," by Mr. Ch. Dennery; "Foundry Production—Technical Organization of the Cycles of Manufacture," by Mr. A. Bonneau; "Treatment of Cast Iron by Gas Bubbling for Reducing the Tendency to Chill, and the Production of High-tensile Iron," by Mr. G. Blanc and Mr. N. Volianik; "Study of Ingot Moulds—New and After Use," by Mr. Ferry; "Account of a Mission to the U.S.A., covering the Making of Malleable Cast Iron," by Mr. J. Menat; "Experimental Study of Factors Governing the Speed of Solidification of a Bronze Cylinder Cast in a Sand Mould," by Dr. W. T. Pell-Walpole; "Study of the Shrinkage Coefficient and Tolerance in Castings," by Mr. Tomonolu Kanno and Mr. Torazo Uehara; "Producing Pig-iron for Making Ductile-iron Castings," by Dr. Toshibiro Kinoshita and Mr. Senichi Sano; "Cast Iron: Structure and the Rôle of Silicon on the Action of Carbides," by Mr. A. Guedras. The Monday and Wednesday are to be devoted to technical sessions, whilst the whole of the Tuesday is to be taken up with works visits. A special programme for the ladies is being arranged.

Latest Foundry Statistics

As reported by the British Iron and Steel Federation, the average weekly output of steel castings in October last was 6,700 tons as against 6,400 tons in September, and 5,800 tons in October, 1954. The total number of employees in steel foundries on November 5 last was 22,240—an increase of 338 since October 8.

According to the British Bureau of Non-Ferrous Statistics, the output of copper-base castings during November, 1955, was 6,976 tons. The 11-month total reached 65,579 tons as against 55,189 tons for the corresponding period of 1954.

Cast-iron Table Moulded in CO_2 Sand

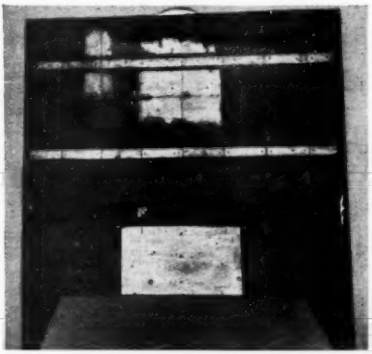
By H. J. Woodman.

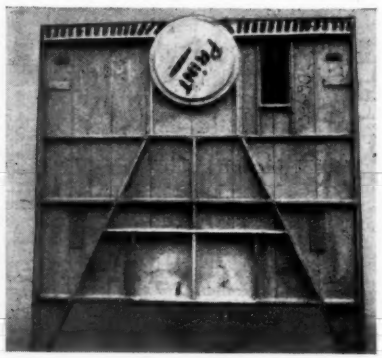
A large table casting in iron was required—a one-off job having a plain flat face of ¾-in. thickness and 5-ft. square which had to be machined all over. To get the best results it was decided to cast this face downwards. The question of what sand to use on this face occasioned some deliberation, but the ultimate choice lay between making a dry-sand mould, or using CO_2 sand on this face only. Not many castings had been made previously in the foundry with the use of CO_2 sand and these mostly were small. However, they had no scabs or other defect where CO_2 sand had been used, so the decision was made to use this sand on the bottom mould for the face table.

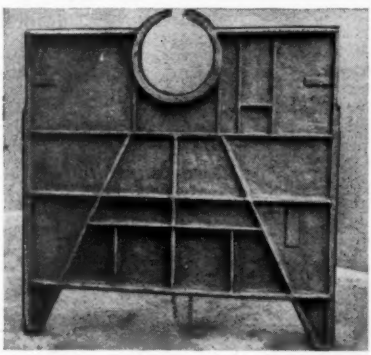
Moulding

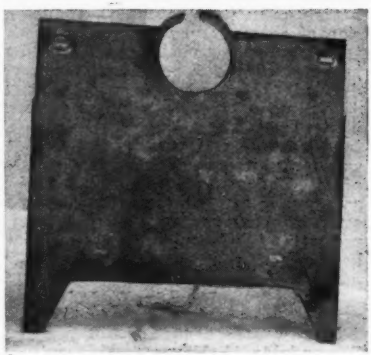
Due to the flimsy nature of the pattern and the number and position of ribs (Figs. 1 and 2) it was not found to be very practical to fill up a top-part box and place the pattern on, so that the bottom could be rammed up and turned over in the normal way—as had been the procedure for other castings where CO_2 sand had been used. In consequence, the procedure adopted was that the bottom box was placed on the foundry floor and levelled up, sand was then packed into this box and rammed firm. The surface was strickled off to 3½ in. below the joint face of the box, venting was then carried out, after which a coke fork was lightly dragged across this face to roughen it somewhat. CO_2 sand was then covered over this roughened surface and without being rammed or pressed down was strickled off to within 2½ in. of the box joint. Without further venting, the pattern was placed on face downwards and after weights had been placed on it the pattern was hammered down evenly all over to give a ¼-in. thickness of firm CO_2 sand. The pattern was then tested for straightness and, working with parallel straight-edges and blocks, the joint was rammed up with ordinary facing sand after which the pattern was rapped and withdrawn so that CO_2 gassing could be carried out before the top part was commenced.

The gassing was done in stages or areas of about 8 by 10 in. over the whole of face using a wooden frame and a rubber pad ¼-in. thick drilled to take end of a blow-gun connected by rubber tube to CO_2 cylinder. The pressure used was 20 lb. per sq. in. for 15 to 20 sec. The sand mixture used was as follows: 100 lb. Brean sand (from Bristol Channel area), 4 lb. CO_2 binder and 1 lb. pelleted pitch. When gassing was completed, the pattern was replaced and ramming of the top-part was proceeded with. The pattern was lifted from the mould with the top part; the edges were made good in the bottom part and the face tested for straightness, any high spots being rubbed down with a wooden block. Self-firing blacking was then brushed over the whole CO_2 sand face and fired in the usual way. The dressing was made up as follows: half









FIGS. 1 AND 2.—*Face and reverse sides of the modified pattern for the table casting.*

FIGS. 3 AND 4.—*Back and front of the finished iron casting; it weighed 7 cwt.*

Cast-iron Table Moulded in CO_2 Sand

plumbago, half bonded-blacking, plus spirit and a small quantity of shellac as an additional bond.

The runner for this job consisted of two down-gates connected to separate sprues running parallel with back edge of the mould; six step-gates, 1½ by ¼ in. were taken off each sprue to allow metal to run across the face. When the top was finished and the core secured, the mould was closed and cast.

Pouring

The metal was poured very hot and the metal ran very nicely. When the casting was removed from the sand, it was found that the CO_2 sand stripped very well, giving a good clean face, completely free from scabs or other defect. When straight-edges were placed across the face it was found to be flat to within $\frac{1}{16}$ in. In Fig. 3, the four bright places which show on bottom face are where the small rapping plates were situated. These were not filled in on the mould, as it was thought there might be a risk of swilling out of the sand used to fill in these indentations, so they were left for grinding off the casting later. The weight of the casting was 7 cwt.

Notes from the Branches

Newcastle-upon-Tyne

The meeting of the Newcastle-upon-Tyne branch of the Institute of British Foundrymen held on January 14, was the occasion of a visit from the president of the Institute, Dr. A. B. Everest, and the general secretary, Mr. G. Lambert. About 70 members and visitors attended and two representatives from the Lancashire branch, Mr. C. R. van-der Ben and Mr. H. Haynes, gave a talk on foundry techniques.

The meeting was opened by MR. C. NICHOLLS, the branch president, who, on behalf of the members, welcomed Dr. Everest and Mr. Lambert and expressed the pleasure all felt that they were able to be present; in particular he congratulated Dr. Everest on being elected vice-president of the International Committee of Foundry Technical Associations.

DR. EVEREST, in thanking members for the reception given to him, expressed his pleasure at receiving the Council's invitation. He was no stranger to Newcastle, and remembered with pleasure several of the Institute's conferences which had been held in Newcastle. The branch was one of the earliest formed and, for a time, was the largest; its members had proved a great asset to the Institute as a whole and had made many valuable contributions to its *Proceedings*. He particularly wished to express his appreciation of the welcome accorded to the visitors from the International Foundry Congress when they toured the North East Coast area last summer.

Mr. Lambert was on home ground and there was no need to introduce him, but he expressed pleasure to be with the members again and congratulated the branch on its steady progress, particularly on the infusion of so many young members, which he regarded as an indication of the sound manner in which the business of the branch was being conducted. He directed the attention of members to two recent developments of the Institute: one concerned the library, which contained most of the useful books on foundrywork—a catalogue had now been compiled and copies were available on application to the head office. The other development was the formation of an appointments register, and members who were interested in obtaining employment or in improving their present positions could obtain a registration form from head office.

Foundry Techniques

Mr. Nicholls then introduced Mr. C. R. van-der Ben and Mr. H. Haynes, who, jointly, presented their Paper, Mr. Haynes discussing foundry and Mr. van-der Ben metallurgical aspects.

In his opening remarks, Mr. Haynes said he did not propose to discuss shell moulding or the CO_2 Process, but intended to confine attention to green-sand moulding, which need not be limited to small jobs, but, with proper craftsmanship, could be used for the production of large castings. He instanced a bed-plate, 18-tons in weight, cast in a skin-dried green-sand mould and showed, with the aid of slides, how it was made and the arrangements for casting it. From an economical point of view there was much to be said for green-sand moulding and further examples were shown of moulds for good-sized castings which had been successfully made in green-sand; included among these were cast-iron liners for oil engines, the moulds for which, Mr. Haynes claimed, using his equipment, were being made by hand-ramming at the rate three times as fast as machine-made moulds. Mr. Haynes preferred the stopper-type pouring basin for large work and favoured runners made in pipes; much of the equipment described for particular jobs was both ingenious and practical.

Mr. van-der Ben's remarks were concerned with high-duty cast irons, which high-speed oil-engines, with their increasing demands on materials, need. At the works where he was engaged only two cupolas were installed and any differing compositions of metal needed in any one day had to be obtained from the same cupola. Under the circumstances, it was found to be profitable and practical to operate the cupola for a base iron of 17 tons per sq. in. tensile. By adding to the metal as tapped such alloys as nickel and molybdenum in the proper proportion, cast irons suitable for higher duties could be produced. Mr. van-der Ben said the addition of 0.4 per cent. nickel and 0.4 per cent. molybdenum raised the tensile strength to 23 tons per sq. in. Increased percentages of these elements further increased the strength, but for economic reasons it was considered profitable to use crucible tilting furnaces to melt a mixture which when added to the base metal would reduce the carbon content to 3 per cent. Adopting this method, a high-duty alloy containing 0.7 per cent. nickel and 0.7 per cent. molybdenum would give a tensile strength of 26 tons per sq. in. and possess the toughness necessary for special service. Reference was also made to the useful properties obtained from irons alloyed with chromium and vanadium.

An interesting discussion followed and a very profitable meeting was concluded with an omnibus vote of thanks to the president of the Institute, the secretary, Mr. Haynes and Mr. van-der Ben, proposed by Mr. C. C. Gresty, which was enthusiastically accorded.

Disc Brakes for Motor Vehicles

The following abstract* has been taken from a Paper by F. J. Bradbury and F. G. Parnell, presented at a general meeting of the automobile division of the Institution of Mechanical Engineers, in London, at the end of last year.

The development of disc brakes is reviewed from the early part of the 20th century to the present time. A number of designs are discussed and the characteristics of disc brakes are compared with those of drum brakes. In particular it is shown that the outstanding feature of the disc brake is its anti-fade characteristic which gives it superiority over the drum brake in installations where space is restricted. The main part of the paper is devoted to a consideration of those factors which control design, and it is shown that rigidity is of paramount importance if a disc brake is to be used without an external servo. Methods of obtaining the required degree of stiffness are discussed and curves are drawn to show the influence of caliper stiffness and other lost motions on displacement ratio and brake pedal travel.

Materials

Dealing with disc material, the Authors state that practical experience and a study of the basic functions of the disc have shown that it should possess the characteristics: (1) good heat-conductivity; (2) high resistance to scoring and thermal crazing; (3) good mechanical strength; (4) consistent friction characteristics.

Item (1) immediately suggests copper as a disc material, and in fact this has been used very successfully in aircraft disc brakes. These applications showed clearly the advantage of having a brake disc in a high-conductivity material but unfortunately, the high cost and weight of copper made is less attractive as a material for motor-vehicle brakes. Other materials in various grades have therefore been tested and from these it has been possible to select suitable alternatives.

For both passenger and racing-car applications steel can be used if the surfaces are chromium plated. The effect of chromium plating is to reduce both scoring and corrosion and, further, to enable a high degree of surface finish to be obtained.

In many cases chromium cast iron has been used successfully as a disc material. It has the advantage of being economical both in material and manufacturing cost. Furthermore, it has consistent friction characteristics and has good resistance to scoring and thermal crazing. Naturally its mechanical strength is lower than that of steel and for this reason it may be at a disadvantage where thin sections cannot be avoided. In such cases spheroidal-graphite iron or pearlitic malleable-iron may be used with consequent increased cost. Materials are continually being developed for discs and there are indications that some success is being achieved. At present, however, the practical choice remains between steel and chromium iron with spheroidal-graphite iron and pearlitic malleable-iron as alternatives in special circumstances.

Among the conclusions, the opinion is expressed that the disc brake can only show considerable superiority over the drum brake where the drum brake is overworked. Although this already applies to many racing cars and some commercial vehicles, there are still a large number of popular passenger cars on which drum brakes provide satisfactory braking. In these instances the drum brake with its lower initial cost, well proved design, and world-wide servicing facilities may still be preferred to the disc brake for the next few years. On the other hand, improvements are continually being made in disc-brake design and the maximum speed of motor vehicles will almost certainly increase. It is therefore probable that the disc brake will be widely used first on the larger and faster vehicles and be gradually adopted on the smaller class of vehicle as this type of brake becomes more developed. The position on commercial vehicles is generally more favourable for installation of the disc brake, mainly because space is often less restricted, particularly on trucks of medium capacity. This gives more scope for improving the general design of the disc brake and also for providing better cooling facilities. It is most likely that the trend towards the use of a hand-brake on the transmission will continue because it simplifies the installation problem and does not impair the cooling of the main brakes.

* Reproduced by courtesy of the Institution of Mechanical Engineers.

Law Cases

Attitude to Danger—Modern Trend Criticized

Part of the modern attitude to danger in industry was criticized by Judge Norman Carr at Stourbridge County Court recently, when a machine operator claimed damages for an injured ankle. "There is a theory these days that absolutely all danger must be removed from industry. That is obviously going too far. The question is how to test the issue," the Judge said.

Luther Howard (aged 65), of Old Hill, was claiming up to £200 for damages due to injury when he was walking to his machine along a gangway which was obstructed by disused tools. Only 5¾ in. was left for him to get by, he said, and he had complained about it as it had been like that for three years. The accident happened in November, 1954, and he was still in pain with a bandage around his ankle.

"This man was doing something which all of us do when we go out for a walk," the Judge said, "when we have to step off the kerb." A consultant engineer, Col. R. V. C. Brook, agreed that it was possible to get along the passage but a little awkward.

Howard was claiming £200 for damages due to the injury from Stewarts and Lloyds, Limited, Halesowen, but Judge Carr gave judgment for £161. He granted a stay of execution pending an appeal.

Court Settlement

The Master of the Eire High Court, Dublin, was told recently that £2,500 and a sum for costs would be paid, without admission of liability, to Alfred McGrath, foundry and iron-workers' helper, of Crumlin, for injuries received during employment, against the A.P.V. Company, engineers and founders, lately of Wandsworth Park, London. Mr. McGrath had complained that on May 16, 1954, while employed by the company on the premises of Arthur Guinness & Company, Limited, at their St. James's Gate Brewery, when removing steel ladders from aluminium vats, the ladder on which he was standing slipped and he fell some 24 ft., injuring his thigh severely.

At a Ministry of Housing and Local Government enquiry held at Cosely, on January 12, William Barnsley, Limited, appealed against the refusal of the Cosely Urban District Council to permit them to build a new entrance to their foundry in Ash Street, Bradley, Bilston. For the firm it was said such a facility would enable them to speed up the movement of raw materials, also visibility would be improved for their own drivers and other road users. The application was refused solely on the grounds of road safety. Following an inspection of the site the enquiry was closed and a decision is to be announced.

Midlands Industry Report

At a meeting of the Midland Regional Board for Industry on January 17, it was stated that unemployment in the region was slightly higher than in December but there was no evidence that the rise was any greater than normal for the time of year. It was partly due to the December school leavers who had not yet obtained work. The number of vacancies notified to the Employment Exchanges in December was 49,380—some 2,000 fewer than in October. Latest returns put unemployment in the Midlands at 0.4 per cent. of the insured population compared with the national figure of 0.1 per cent. In Coventry the figure was 0.3 per cent. Despite the temporary trade recession in the motor industry, import restrictions abroad, and the credit squeeze at home, the Board believes that the outlook for this year is one of continued prosperity and rising production although indications were perhaps not as positive as at the beginning of last year.

With regard to plans for expansion, Mr. A. M. Halls, Regional Controller of the Board of Trade, said that new building projects for manufacturing industry totalled 11,000,000 sq. ft. in 1955, compared with 9,000,000 in 1954; there was no sign of any slackening off in demand as the result of the credit squeeze. The motor trade and associated industries accounted for about 23 per cent. of the total compared with more than 26 per cent. in 1954 but despite the fall in its share of the total, the area of new building approved for the motor industry was slightly greater in 1955 than in the previous year. In Coventry 40 new projects were approved in 1955 involving 1,000,000 sq. ft.

Major Dibben, chairman of the Board, said the response from industry to an appeal by the Board for co-operation in the Government-inspired fuel-economy campaign was even better than had been hoped, and he was confident that the 10 per cent. cut in industrial fuel consumption which was the aim of the scheme, would be achieved.

Unified Control of Millspaugh

To provide unified control of Millspaugh, Limited, and to avoid the possible ill effects of having two nearly equal partners in the company, agreement has been reached for the purchase by Hadfields, Limited, of the entire Millspaugh ordinary shareholding of Mr. K. F. Landegger.

This purchase is on the same terms as those now available to Millspaugh holders who accepted the original Hadfields offer of December 1, 1955—namely, two Hadfields £1 shares for every seven Millspaugh ordinary 2s. 6d. units, plus 1s. 8d. for each Millspaugh unit. Millspaugh will continue to supply Black-Clawson International, Limited, and Walmsley (Bury) Group, Limited, or any other manufacturers of paper-making machinery with shells and suction rolls as it has always done. It is not now, therefore, Mr. Landegger's intention to acquire an interest in the Walmsley (Bury) Group.

IBF West Wales Meetings

The secretary of the Wales and Monmouthshire branch of the Institute of British Foundrymen draws attention to an error in the Institute's *Journal*, where the meeting place for the West Wales section on January 27 is given as Swansea. Actually this meeting will be held in Llanelly Technical College, that on February 24 in Swansea (RTB Canteen, Landore Works), and the March meeting again at Lanelly, all starting at 7 p.m.

Westinghouse Brake's Record Order-book

The aim of the Westinghouse Brake & Signal Company, Limited, is to secure greatly increased production, thereby offsetting increasing costs of materials, labour, and development, says Capt. A. R. S. Nutting, the chairman, in his review with the group accounts for the 52 weeks ended October 1, 1955. The acquisition of Douglas (Kingswood), Limited, which became a subsidiary on October 26 last, is expected to make a substantial contribution to production in the near future. Regarding current prospects, Capt. Nutting states that the parent's order-book is at a record level and that the value of tenders outstanding, recognized as potential orders, is most gratifying.

The rights issue to stockholders in the Westinghouse Brake & Signal Company, and to ordinary stockholders in the Consolidated Signal Company, Limited, has been underwritten. The issue is of 615,239 £1 ordinary shares at 70s. each, payable as to 30s. on acceptance and the balance of 40s. on April 12. Provisional allotment is being made to stockholders registered on January 5 on the basis of three shares for every 10 £1 units.

Consolidated Signal Company, as a holder of Westinghouse, is entitled to a provisional allotment of 117,600 shares. These are being provisionally allotted direct to Consolidated stockholders on the basis of three Westinghouse for every four Consolidated £1 ordinary units held on January 5.

Proceeds of the issue, approximately £2,110,000 net, will not only be used to fund the balance of the indebtedness to bankers, at present approximately £1,250,000, but also with a view to increasing productive capacity and providing additional working capital.

Failures of Cast-iron Work Rolls

Failures of cast-iron work rolls are being studied jointly by the Carnegie Institute of Technology on behalf of the Association of Iron and Steel Engineers, and of the Roll Manufacturers' Institute in the United States. One report issued in the form of a paper and already published, described a method of analysis which gave the radial and tangential temperature stresses in a hypothetical roll. A further paper, published in *Iron and Steel Engineer*, recently, reports an extension of the investigations to the temperatures stresses in an actual roll. Graphs are presented showing changes, in temperature and major temperature stress components, as a roll is heated from cold during early rolling. The roll-temperature measurements were at the mills of Bethlehem Steel Corp., Sparrows Point, Md.

From the test results it was concluded that by controlling operations carefully during the first 100 to 200 revolutions, perpendicular breaks in the body of a roll can be minimized. Spalling was shown to be due to high radial stresses of around 70 tons per sq. in. set up in the roll by temperature gradients. These stresses combined with the radial tension set up by rolling pressures, it is stated, may be much greater than stresses accounted for by temperature gradients alone. More study of the stresses caused by rolling pressures is needed, but it is dependent upon more data being made available from the mills. More information is also needed about the physical properties of the roll material.

RIO TINTO COMPANY, LIMITED—Mr. Hugh Saunders is to join the board and will relinquish his position as secretary of Unilever, Limited, on January 31.

News in Brief

DAVY AND UNITED ROLL FOUNDRY, LIMITED, will shortly erect a research block at Empire Works, Haverton Hill-on-Tees.

MIDLAND MOTOR CYLINDER COMPANY, LIMITED, has been granted permission to erect a foundry on a site at Dartmouth Road, Smethwick, Staffs.

REYNOLDS LIGHT ALLOYS, LIMITED, has had plans prepared for the erection of a new foundry and office block in Studley Road, Redditch, Worcs.

AN ORDER for 12 diesel shunting locomotives has been placed with the North British Locomotive Company, Limited, Glasgow, by the Scottish Region of British Railways.

HALL & MCCLELLAND, LIMITED, grey-iron, malleable and non-ferrous founders, announce a change to larger premises at 351, Brixton Road, London, S.W.9 (telephone: BRIxton 4068 and 4277).

MORE THAN 400 EMPLOYEES and friends attended the annual dance of Aiton & Company, Limited, pipework specialists and ironfounders, of Derby, which was held at the Trocadero Ballroom, Derby.

THE CUNARD LINER Samaria, of 19,597 tons, has been sold to the BISC and will be broken up for scrap metal. The Cunard Company, Limited, has stated that the liner will leave Southampton some time this week. She was built at Cammell Laird's shipyard, Birkenhead, in 1921, and was used as a troopship in the last war.

ABOUT 300 EMPLOYEES in the foundry of the International Harvester Company (Great Britain), Limited, at Doncaster, have been put on short time in consequence, it is stated, of a seasonal reduction in business. Notice has also been given to 90 men and 20 women at the works, but 10 of those discharged are stated to have been given other work in the factory.

Mr. C. H. JORDAN, sales director of Hague and McKenzie, Limited, aluminium hollow-ware manufacturers of Birmingham, is to undertake a tour of Central and South West African markets. He is leaving this country on February 3 and after visiting the main centres of the Union of South Africa, he is to spend the second half of March in Northern and Southern Rhodesia.

FROM a number of enquiries received from many quarters in the non-ferrous scrap metal trade, it appears that some confusion has arisen regarding the Non-Ferrous Club and the recently-formed company, Scrap Metal Market, Limited. In order to dispel any misunderstanding the committee of the Club wish to make it quite clear that no association exists between the two.

TO FACILITATE ADMINISTRATION within the group, Associated Electrical Industries, Limited, has formed a new company, Siemens-Ediswan, Limited. Siemens Bros. & Company, Limited, and the Edison Swan Electric Company, Limited, will remain and preserve their own identity. The new company's chairman will be Sir William Morgan and Dr. J. N. Aldington will be managing director.

THE South of Scotland Electricity Board have placed a contract with C. A. Parsons & Company, Limited, Newcastle, for the manufacture, delivery and installation of the No. 1 120-mw turbo-alternator, condensers, and feed heating plant at Kincardine generating station which is in course of construction. The contract sum amounts to over £1,000,000, and the set is scheduled for commissioning in 1958.

THE LATEST DEVELOPMENTS in metal flame-cutting techniques were shown in Birmingham on January 16, to mark the opening of a new flame-cutting department in a 10,000 sq. ft. extension to the works of Morgan (Tyseley), Limited. Some 10 of the most modern machines were demonstrated in a six-day exhibition arranged by the British Oxygen Company for firms in the Central England area.

KEITH BLACKMAN, LIMITED, Mill Mead Road, Tottenham, London, N.17, announce that they have designed and placed on the market a type of fan entering the Tornado range for the purpose of extracting fumes emitted from chemical processes. The fan parts carry no special protective coating, but are constructed in P.V.C. material which, it is claimed, is completely resistant to corrosive attack.

A MEETING of the Sheffield Chamber of Commerce in February is to be visited by four Government officers from the Middle East who are touring the country. It is hoped that the meeting will lead to increased trade with the Middle East for Sheffield. The four officers are:—Mr. J. M. Paterson, counsellor, Bagdad; Mr. G. Hiller, secretary, Tehran; Mr. M. Gale, secretary, Bahrain; and Mr. L. M. Minford, secretary, Cairo.

SIXTEEN EMPLOYEES of Monsanto Chemicals, Limited, who during the past year completed 25 years of service, have received long-service awards. The presentations were made by Mr. D. R. Mackie, acting manager director, at a dinner held recently at Ruabon. More than 140 employees were present, all of whom had been with the company for 25 years or more; their combined service totalled more than 5,000 years.

SOME UNEXPECTED TROUBLES and subsequent rises in building costs have increased by about £100,000 the estimated cost of the war memorial building of the Institute of Marine Engineers which is being erected opposite Fenchurch Street Station. The building, which will be ready for occupation in about 18 months' time, will now cost some £650,000 and the institute is appealing for a further £100,000 to meet the additional requirement.

Mr. JOHN ROBERTSON LAMBERTON, head of the Coatbridge foundry bearing that name, is to present a peal of bells to his old school, Fettes College, in memory of his younger brother, Mr. A. R. Lamberton, who won an M.C. in the first world war, and died in 1938. The foundry concerned has turned out scores of famous bells in Britain including the 17-ton "Great Paul" in St. Paul's Cathedral. The handing-over ceremony was televised from the famous bell foundry of Taylor's at Loughborough.

CATERPILLAR TRACTOR COMPANY, LIMITED, of Great Britain, is to set up a new plant at Glasgow, for the manufacture of crawler tractors in the United Kingdom. The first unit will occupy an area of about 500,000 sq. ft. and initially 1,500 men will be employed. Up to this time the activities of this subsidiary of US Caterpillar have been confined to the replacement parts business. It is understood that at the present time there is no intention of including a foundry department in the new Scottish project.

THE MAJORITY of the 400 employees of Walter Rowley, Limited, metalworkers, of Birmingham, contributed to the portrait of the founder of the business, Mr. Walter Rowley, who died last year at the age of 85. The portrait was painted by Mr. Robin Jennings, and unveiled by Mr. George Humphries, who joined the business soon after it was launched. The late Mr. Rowley started the firm at the age of 28 with two assistants. He had a marked flair for design and did much to raise the standard of brassfoundry in the early years of this century.

Personal

Mr. J. C. GREEN, M.I.B.F., of Gibbons (Dudley), Limited, has been elected a fellow of the Institute of Ceramics.

Mr. W. YORKSTON, moulder, has retired after 53 years' service with Dobbie, Forbes & Company, Limited, Larbert Foundry, Larbert.

Wakefield-Dick Industrial Oils, Limited, announces that Mr. D. W. BURNAND has been appointed sales manager of the electrical division.

Mr. H. P. HUGHES has been appointed general works manager and technical adviser of the British Electro Metallurgical Company, Wincobank, Sheffield.

Mr. J. R. V. COOPER has been appointed manager of the fuel-oil department at the head office of Fina Petroleum Products, Limited, with effect from January 1.

The Rt. Hon. IAIN MACLEOD, M.P., Minister of Labour and National Service, has appointed Mr. I. S. DEWAR to be his Assistant Private Secretary in succession to Mr. G. A. BRAND.

During a two-month export survey tour of West Africa, Mr. J. H. WALTER, general sales manager of the spring-balance division of Geo. Salter & Company, Limited, West Bromwich, will visit Kano, Lagos, Accra, and Freetown.

Mr. RONALD S. PUNT has been appointed chief engineer and designer of H. Widdop & Company, Limited, diesel-engine manufacturers, of Keighley (Yorks), in succession to Mr. J. WHITAKER, who has resigned in order to devote his time to his other activities.

Mr. G. W. PAGET, A.I.M., C.G.I.A., member of the London branch, Institute of British Foundrymen, is to be superintendent of the investment-casting section which occupies roughly half the shop-area newly established by Deloro Stellite at Belleville, Ontario.

Mr. ALAN HILL, general manager of No. 6 area of the East Midlands Division of the National Coal Board, has joined the board of Plowright Brothers, Limited, Chesterfield, mining and general engineers. He will leave the Coal Board at the end of February.

Following the retirement at the end of January at Guy Motors, Limited, of Mr. H. MARSTON, controller of purchase and supply and Mr. A. H. MASON, buyer, the two posts will be merged and Mr. A. H. CADWALLER, will become buyer and material controller.

Mr. J. G. LLOYD has been appointed managing director of George Mann & Company, Limited, engineers and printing machine manufacturers, Leeds. He succeeds Mr. A. H. HIRD, who has retired from that position but will continue as chairman of the company.

Councillor W. A. PROOM, head of the research department of Prince-Smith & Stells, Limited, textile machinery makers, Keighley, is to be invited to allow his name to go forward for adoption at the annual meeting of the Keighley Division Conservative Association as prospective Conservative candidate for the Keighley Parliamentary division.

The appointment of publicity manager of Ferodo, Limited, has been taken over by Mr. W. P. HOWARD, who is 33. From 1948 to 1951 he was responsible for editorial publicity with Bakelite, Limited, and has subsequently been engaged in Press relations and allied work within the publicity organization of the General Electric Company, Limited.

Mr. WILLIAM P. E. MACINTYRE, chief engineer since 1947 with Baxter Bros. & Company, Limited, Dundee, spinners and manufacturers, is taking up a similar post with the firm of Sketchley, Limited, dyers, Hinckley, nr. Leicester. He will be responsible also for five other factories within the organization at Market Drayton, Ipswich, Nottingham, Derby and London.

MR. H. SUNDERLAND, who has been with the firm of Prince-Smith & Stells, Limited, of Keighley, Yorks, for over 30 years, has been appointed works manager of the Kingston Industrial Works at Kingston, Jamaica. Mr. Sunderland is a founder member of the Keighley Technical College Association, and a past-president of the West Riding of Yorkshire branch of the Institute of British Foundrymen.

Obituary

Mr. G. E. G. GILFILLAN, director of the English Steel Corporation, Limited, has died at the age of 67.

Mr. FRANK WHIPP, chairman of Whipp & Bourne, Limited, manufacturing electrical engineers, of Castleton (Lancs), died on January 14.

Mr. HARVEY CACHEMAILLE, formerly managing director of Intertype, Limited, makers of composing machinery, of Slough (Bucks), died on January 12 at the age of 77.

Mr. FRANK BERRY, who died recently at the age of 82, was formerly foundry manager of John Stirk & Sons, Limited, ironfounders and machine-tool makers, of Halifax.

The death has occurred of Mr. WILLIAM HENRY GERMAN, for many years senior foundry foreman of the English Electric Company, Limited, Rugby, and chairman of the works benevolent fund. He was 64.

Mr. HUGH KEARTON, a director of Steel & Company, Limited, engineers, of Sunderland, and its associated company, Steels Engineering Installations, Limited, has died at the age of 65. He had been a director of Steel & Company for more than 30 years.

Mr. CHARLES RALPH TOWNSEND, chairman and joint managing director of Autoset (Production), Limited, trolley and truck manufacturers, etc., of Birmingham, has died at the age of 73. Mr. Townsend built one of the first motor-cars in Birmingham and was a pioneer in the development of the motor-scooter.

Mr. EDWARD STANLEY BYNG, vice-chairman of Standard Telephones & Cables, Limited, died recently at the age of 72. He was a former honorary treasurer of the Institution of Electrical Engineers, a founder member of the British Institute of Management, and a former vice-president of the Institute of Industrial Administration. His interests were vested in a wide range of associations. He was a member of the Education Committee of the Federation of British Industries and was past member of the Grand Council of the FBI. Mr. Byng was a former vice-chairman of the National Institute of Industrial Psychology and of the British Association for Commercial and Industrial Education.

Personal estate valued at £251,727 is bequeathed under the will of MR. HAROLD HILLIER, a director and chief engineer of G. & J. Weir, Limited, the Glasgow engineering and ironfounding concern, who died on August 27 last. Mr. Hillier, who was 64, started work as an apprentice with Vickers, Limited.